

Chapter 6

RECOMMENDED MASTER AND LAND USE PLAN

The recommended Master and Land Use Plan for Tucson International Airport is depicted on Exhibit 6-1. Land areas and Airport facilities are identified for certain uses up through the achievement of PAL 4, which includes the 20-year planning horizon. The Plan includes facilities reserved for development beyond PAL 4 to ensure that the Airport will continue to fulfill its primary role as the commercial airline airport (passenger and cargo) serving the Tucson region. The recommended Plan also addresses the Airport's secondary roles to serve business and other general aviation users and the Arizona Air National Guard. The following paragraphs describe the various elements of the Plan.

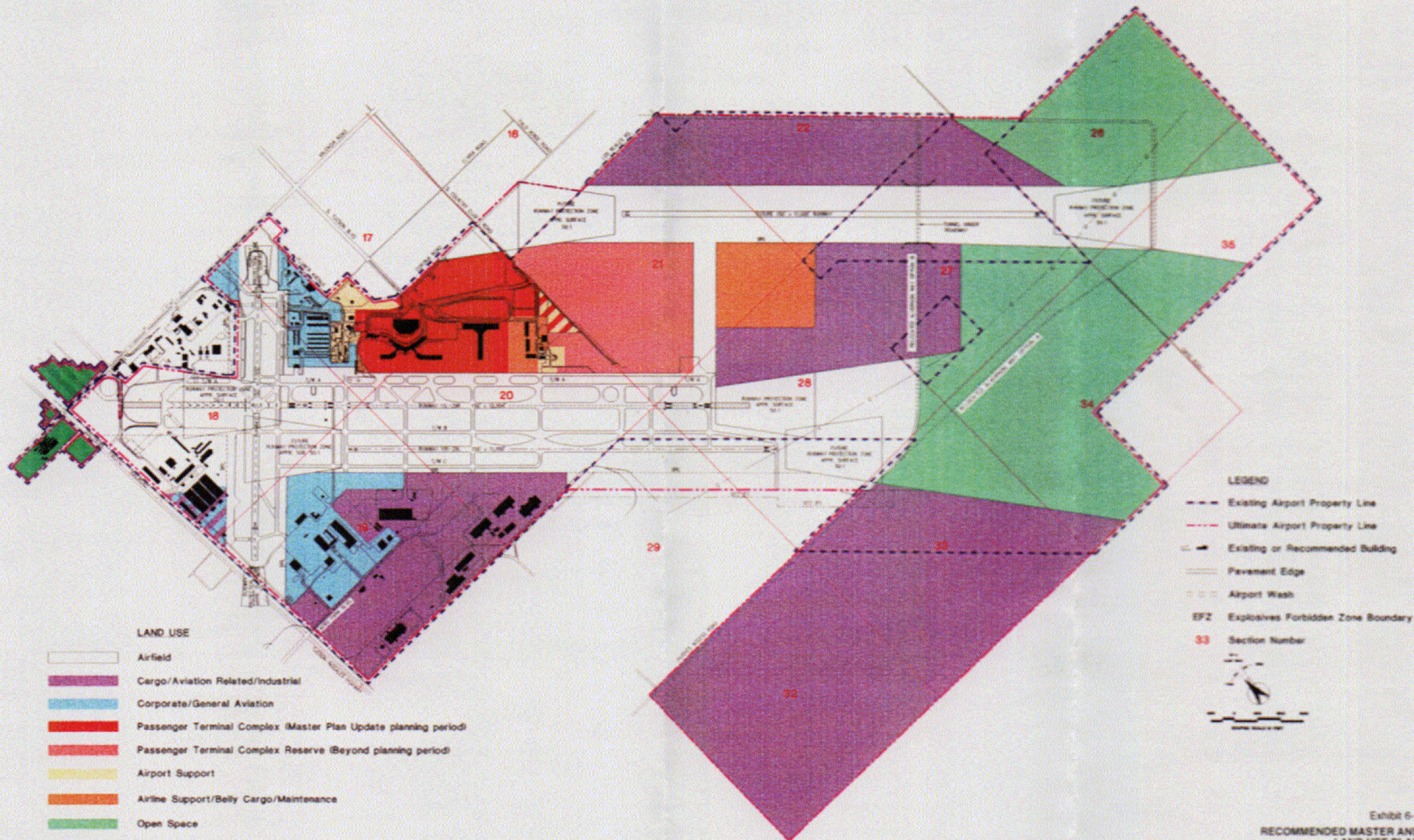
AIRFIELD

The land designated for airfield accommodates primarily runways, taxiways, runway safety areas, and runway protection zones.* **The recommended runway improvements include construction of new parallel air carrier Runway 11R-29L (the close parallel runway) to accommodate air carrier aircraft southwest of Runway 11L-29R and the reconversion of existing temporary Runway 11R-29L to its former taxiway status.** Approximately 200 acres of land currently occupied by Hughes Missile Systems facilities will need to be acquired to accommodate construction of the runway and associated taxiways. An additional 960 acres of land** to the southeast will need to be acquired to accommodate the Hughes facilities that will need to be relocated.

Runway development beyond PAL 4 includes construction of a third parallel air carrier runway southeast of the existing runways (the far parallel runway alternative). The recommended location of the far parallel runway is northwest of the location depicted in the 1987 Master Plan and on the Airport Layout Plan, and was selected so that the terminal complex—in both the existing and long-range locations—would be more centralized with respect to the runways. No more land would need to be acquired northwest of the runway than is currently depicted on the ALP for acquisition. This location of the runway would also meet the Authority's policy of keeping the area exposed to aircraft noise of DNL 75 and

*All runway protection zones, except for the south end of Runway 3-21, are on Airport property. The land for that runway protection zone is located on the San Xavier Indian Reservation and is to be maintained in uses that are compatible with Airport operations.

**On the basis of information provided by Hughes Missile Systems, July 1996.



LEGEND

- Existing Airport Property Line
- Ultimate Airport Property Line
- Existing or Recommended Building
- Pavement Edge
- Airport Wash
- EF2 Explosives Forbidden Zone Boundary
- Section Number

Exhibit 5-1
**RECOMMENDED MASTER AND
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higher completely within the Airport boundary.* It is not anticipated that this runway will be needed within the planning period for this Master Plan Update. The decision with regard to runway location should be made when final planning for the runway is completed.

Several taxiway improvements are also recommended. It is recommended that Taxiway C be relocated so that its centerline-to-centerline spacing from new Runway 11R-29L is 450 feet. The relocation of Taxiway C would increase the amount of land available for development southwest of the taxiway.

Two new runway exit taxiways for general aviation aircraft are recommended. One is an exit from Runway 11L to Taxiway A located 2,000 feet from the arrival threshold of the runway. This exit taxiway would allow sufficient runway length for small general aviation aircraft, particularly single-engine aircraft, to land on Runway 11L and exit the runway (1) closer to the general aviation facilities and (2) prior to reaching the passenger terminal area. Therefore, the time that these aircraft occupy the runway would be minimized and the aircraft would not have to taxi near the passenger terminal. The second recommended taxiway would be 2,200 feet from the arrival threshold of crosswind Runway 21 to the east, exiting to the general aviation area. This exit taxiway would allow general aviation aircraft that land on Runway 21 and then stop on the runway prior to reaching the intersection with Runway 11L-29R to exit the runway and proceed to the general aviation area, thereby reducing the amount of time these aircraft occupy the runway and reducing the taxiing distance from the runway to the general aviation area. Both of these exit taxiways would typically be used by pilots performing visual approaches. Exhibit 6-1 also depicts a future high-speed exit taxiway further south, off Runway 21 to the east, which has been depicted on the Airport Layout Plan.

The relocation of Hughes Missile Systems to accommodate new Runway 11R-29L will require the development of access between the airfield and the Hughes facilities. Access is depicted on Exhibit 6-1 from the southeast end of Runway 11R-29L to the recommended new property line. Final alignment of access to the airfield should be determined as part of finalizing the relocation plans.

Crossfield taxiways would be required to connect the far parallel runway with the rest of the airfield. It is recommended that dual taxiways be constructed to allow aircraft to taxi in both directions at the same time. The area reserved for the crossfield taxiways is depicted on Exhibit 6-1. This area allows for dual taxiways with adequate separation between them for the largest aircraft anticipated to operate at the Airport to pass, and provides the appropriate clearance from fixed or movable objects. The location of these taxiways was established so that long-range terminal development could be accommodated as described in the following section.

*As determined from a preliminary noise analysis, assuming an annual number of aircraft operations approximately equal to the capacity of the runway and that the louder jet aircraft will be phased out of the fleet as required by the year 2000.

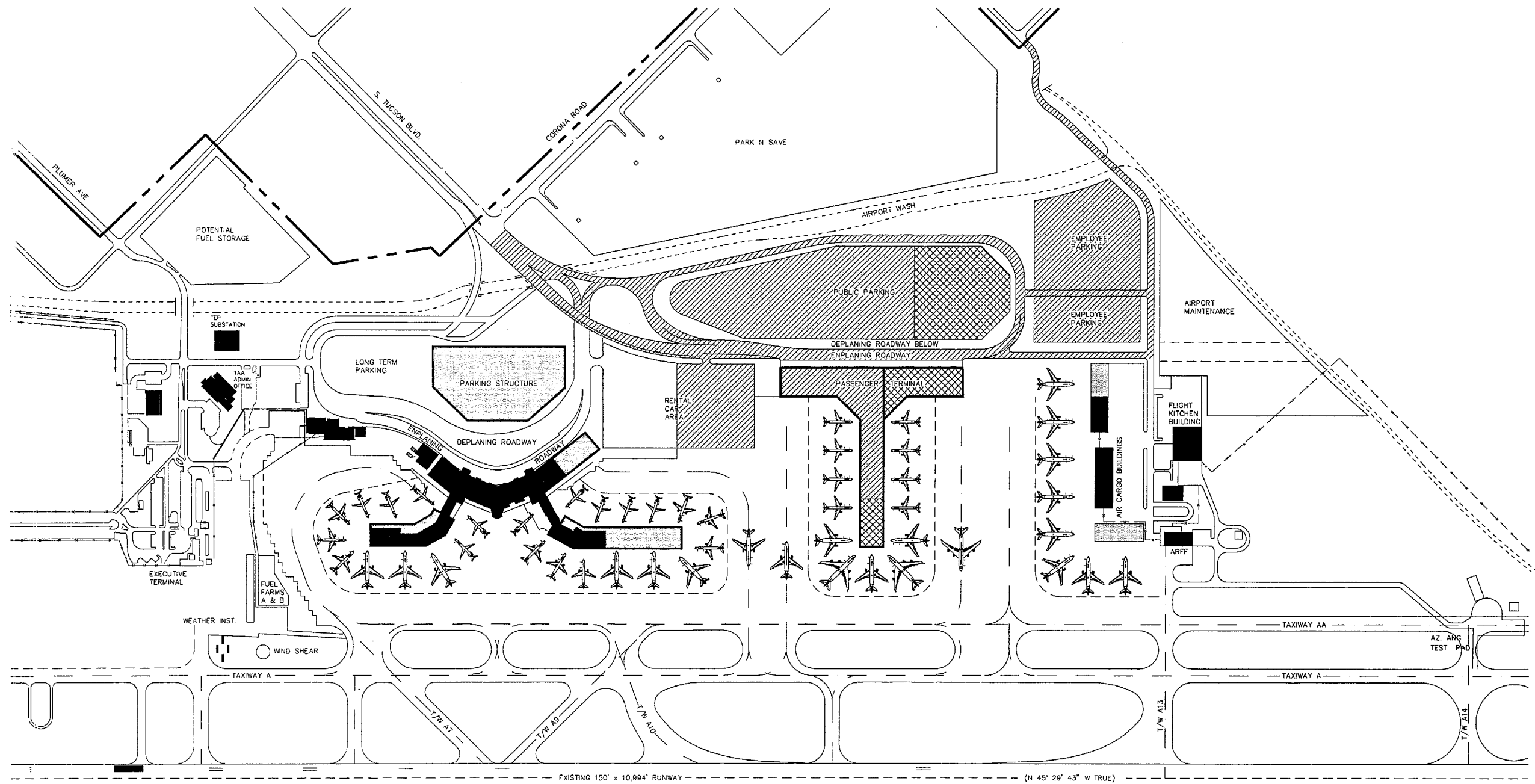
PASSENGER TERMINAL COMPLEX

The recommended terminal area plan, which is similar to that in the 1987 Master Plan, is depicted on Exhibit 6-2. **It is recommended that the passenger terminal requirements be met by expanding the existing terminal and concourses initially and then constructing an additional terminal building and concourse in two phases to the southeast to accommodate passenger demand through PAL 4.** In those areas that would serve widebody aircraft,* the required gate dimensions and taxilane widths have been modified to accommodate the larger newer-generation aircraft. The east concourse of the existing terminal could be expanded to accommodate an additional six to eight aircraft gates, depending on the final configuration. The building footprints as depicted on the terminal area plan represent general locations and concepts. The specific shapes, allocations of space, and number of gates to be provided will be defined as part of a subsequent passenger terminal complex master plan. Passenger access between the two terminals will be provided. The type of access (e.g., moving sidewalks, people mover, shuttle service) will also be determined as part of the passenger terminal complex master plan. The Authority intends to proceed with expansion of the existing baggage claim area to accommodate current traffic levels. This expansion is consistent with the terminal area plan.

It is recommended that international facilities for air carrier passengers be incorporated into the main terminal building when the existing concourses are improved and expanded. Specifically, the Federal Inspection Services and customs facilities should be located on the lower level of the expanded east concourse. Up to five aircraft gates accessing the international facilities could be provided. The gates should be constructed so that deplaning passengers could be directed either (1) into a sterile corridor leading to the inspection and customs area or (2) directly into the concourse. This configuration would allow the gates to serve both international and domestic arriving aircraft. It is further recommended that access to the inspection and customs areas be provided at ramp level so that international passengers arriving on commuter aircraft can be served through the same facilities as those arriving on jet aircraft. The existing international terminal facility could continue to be used to accommodate international general and corporate aviation activity.

Primary access to the passenger terminal will continue to be along South Tucson Boulevard with the existing loop roadway continuing to serve the existing terminal building and the recommended expansion of that facility. A new roadway loop as depicted on Exhibit 6-1 would be added to serve a new terminal building to the southeast. An access study would be required as part of the passenger terminal master plan to identify specific lane requirements and to establish the specific roadway layout.

*In 1987, the McDonnell Douglas DC-10 was the critical aircraft used for determining required dimensions. In this Update, the larger MD-11 manufactured by the same company is used as the critical aircraft.



- LEGEND:**
- Existing
 - PAL 1 to PAL 2 Passenger Terminal and Associated Improvements
 - PAL 2 to PAL 3 Passenger Terminal and Associated Improvements
 - PAL 3 to PAL 4 Passenger Terminal and Associated Improvements

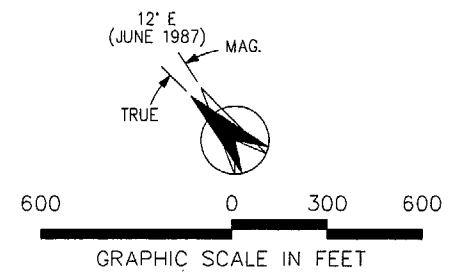


Exhibit 6-2
TERMINAL AREA PLAN
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Parking would remain in its current location with a new parking structure to accommodate future demand. The general location of the parking structure is depicted on Exhibits 6-1 and 6-2. The actual configuration and location of the structure will be determined based on the actual number of parking spaces to be provided and other planning requirements, particularly those regarding Airport security. Parking facilities for the new terminal building to the southeast would be within the roadway loop serving that facility. Long-term economy parking would be expanded in its existing location (the Park N Save lot) to the east to South Country Club Lane. Portions of this parking area would be within the extended runway protection zone for the far parallel runway, which is not anticipated to be needed within the 20-year planning horizon. Parking is a compatible use for the extended runway protection zone. **It is recommended that employee parking remain in its current location until the new terminal is constructed to the southeast.** At that time, it would be relocated to an area southeast of the roadway loop serving that facility.

Rental car facilities will also remain in their current location, with expansion potentially accommodated through construction of a parking structure. The current location of rental car facilities would serve both expansion of the existing terminal and a new centralized terminal building to the southeast.

An area southeast of the existing terminal is reserved for long-range terminal development. It is not anticipated that this new terminal construction would be needed to accommodate passenger traffic through PAL 4. However, preserving this land to eventually accommodate terminal development would prevent other uses from being developed in that area that would preclude the needed terminal development or require costly relocation. The reuse of the existing terminal facilities, ground access, and parking would be studied as part of the planning for that facility.

A potential hotel site is identified at the southeast corner of South Tucson Boulevard and Corona Road. A portion of the area occupied by the Park N Save lot may be required to accommodate the desired hotel development.

CORPORATE AND GENERAL AVIATION

A secondary but important role of the Airport is to serve corporate and general aviation aircraft operators. The primary areas for corporate/general aviation development are (1) in its existing area northwest of the passenger terminal complex, (2) northwest of Runway 3-21 adjacent to Valencia Road, and (3) southwest of the parallel runways near the area occupied by Learjet and on land made available for development by the relocation of Taxiway C.

An additional area that could be developed for general aviation uses is the southern portion of the west ramp area along Tucson-Nogales Highway. This area will be

cleared as part of the preparation for construction of Runway 11R-29L. The Authority will proceed with a corporate/general aviation strategic master plan to develop specific recommendations regarding the location and staging for corporate and general aviation facilities.

AIR CARGO/AVIATION RELATED/INDUSTRIAL

It is recommended that the existing air cargo area southeast of the passenger terminal building be maintained through PAL 4. The old air freight building (Building Number 239 on Exhibit 2-1) would be demolished prior to the construction of a new terminal building and concourse adjacent to the existing terminal building. As cargo volumes increase and terminal expansion continues, the existing cargo area should serve primarily belly cargo with all cargo facilities being developed in other areas. Sufficient land is available for industrial and aviation-related development as well, as shown on Exhibit 6-1. Development of these uses is encouraged so long as all direct aeronautical and other Airport land use requirements continue to be met. In addition to the areas described above, air cargo or other aviation-related and industrial development is depicted in several areas:

- Southwest of the parallel runways east of Runway 3-21
- In the southern portion of the west ramp area that is not within the extended runway protection zone for recommended Runway 11R-29L if this area is not needed for general aviation
- Southeast of the area reserved for passenger terminal complex development area and adjacent to the extended runway protection zone for Runway 11L-29R
- Southeast of the passenger terminal complex and northeast of the potential third parallel runway—not recommended for development until such time as the third parallel runway is constructed

An area south of the passenger terminal and airfield is already identified for relocated Hughes Missile Systems facilities. Those areas with more direct airfield access should be reserved for air cargo and other uses that require airfield access. Areas with rail access should be considered for industrial development, as demand for such use develops.

AIRPORT SUPPORT

It is recommended that the primary Airport support functions remain in their existing locations northwest of the existing passenger terminal complex. Included in this area are the Airport Administration Building; the FAA Airport Traffic Control Tower, which will be relocated; and other Tucson Airport Authority

and federal facilities. The FAA intends to eventually relocate the Tower, although funding has not been allocated or a schedule established for the relocation. It is anticipated that the Tower would be relocated southeast of its existing location to ensure that line-of-sight requirements to all existing and planned runways would be met.

It is recommended that the aircraft rescue and fire fighting (ARFF) facility remain in its current location southeast of the passenger terminal building and adjacent to the existing air cargo area. Preliminary analysis indicated that a new ARFF facility would be required to serve a new far parallel runway at the Airport. The requirement for this facility and a final location should be determined during the planning process for this runway. The northern portion of this area between the existing passenger terminal complex and the airfield associated with the third parallel runway is also reserved for future development of Airport support or passenger terminal functions. Final planning and space allocation would be completed as part of the relocation design.

AIRLINE SUPPORT/BELLY CARGO/MAINTENANCE

Current airline support facilities at the Airport include fuel farms, flight kitchens, and handling facilities for belly cargo. **It is recommended that the flight kitchens and fuel farms be maintained in their current locations. It is recommended that belly cargo continue to be accommodated at the existing cargo facility because of the facility's proximity to existing and future terminal facilities.** An area north of the Tucson Electric Power substation has been identified as a potential location for fuel storage tanks. The Authority has considered installing tanks that could accommodate 2 million to 3 million gallons of fuel.

An area southeast of the area reserved for long-term passenger terminal development is reserved for development of future airline support functions. This area would be most suited for airline maintenance facilities. Based on the requirements for Airport maintenance facilities described in Chapter 4, the area southeast of the ARFF facility and fuel farm is a potential location for the maintenance facility.

OPEN SPACE

No development is recommended in the areas identified as open space except for recreational or other facilities that would not interfere with aircraft operations or navigation and would be compatible with aircraft noise exposure in that area. Such activities include current activities in open space areas, such as mineral extraction and processing, and livestock grazing.

LAND TO BE ACQUIRED FOR NOISE COMPATIBILITY

The Authority's Board of Directors adopted an update of its Federal Aviation Regulations (FAR) Part 150 Noise Compatibility Program for the Airport in December 1990. The update identified 10 noise abatement measures and 14 noise mitigation measures, many of which have been implemented or are in the process of being implemented.

One of the noise mitigation measures is to purchase undeveloped land southeast of the Airport that is exposed to aircraft noise of DNL 65 and higher. Much of the land affected by the recommendation is outside of the boundaries of the Airport Master and Land Use Plan (Exhibit 6-1), as depicted on Exhibit 6-3. It is recommended that, with the exception of the land occupied by the Arizona State Prison (Section 1 of T16S, R14E) and land in the southeast corner of Section 34 of T15S, R14E, the Authority continue to pursue purchase of the undeveloped State and private land exposed to aircraft noise of DNL 65 and higher southeast of the Airport. Because the noise contours do not follow standard township and section-based land ownership patterns, these purchases will most likely require that certain additional lands not included in the noise contours be acquired as well. Following acquisition, it is recommended that these areas remain as open space.

ENVIRONMENTAL REVIEWS

For certain projects recommended in this Master Plan Update, an environmental assessment and, potentially, an environmental impact statement prepared in accordance with FAA Order 5050.4A, *Airport Environmental Handbook*, will be required to obtain FAA approval of the Airport Layout Plan. Such approval will permit the Authority to obtain federal grants or potentially use revenue from a passenger facility charge to fund the development.

An environmental assessment (EA) for land acquisition to accommodate recommended Runway 11R-29L and the associated relocation was completed in 1991.* The potential environmental effects associated with construction and operation of the new runway were assessed. At that time, no known significant environmental effects were identified. However, it will be necessary to prepare an environmental assessment with runway construction as the proposed project. It was determined in the EA for land acquisition that biological and archaeological surveys would be required prior to obtaining approval for runway construction. The EA for runway construction will require updating those sections of the earlier EA addressing aircraft noise exposure and air quality impacts from both aircraft and ground vehicles. These sections should be updated to reflect the changes in the aircraft fleet serving the Airport and the required phase-out of older, louder jets

*KPMG Peat Marwick, *Final Environmental Assessment, Land Acquisition for Runway 11R-29L, Tucson International Airport*, February 1991.

from the air carrier fleet mix by the year 2000, as well as changes in air quality regulations. The air quality analysis will be required for a conformity determination, which indicates whether the project is in compliance with the State Implementation Plan for reducing air quality impacts in the Tucson region.

Eventual construction of the far parallel runway would also require an EA and potentially an environmental impact statement. At such time that this runway is needed, environmental laws and planning regulations may have changed significantly. Therefore, it is recommended that the environmental approval process begin closer to the time that the runway would be needed. As part of the Master Plan Update, aircraft noise exposure associated with operations on the far parallel runway was reviewed to assist in determining the recommended location of the runway. On the basis of the aircraft noise exposure information presented in Chapter 5, it is not anticipated that operations on the runway would result in aircraft noise exposure of DNL 65 and higher for any existing noise-sensitive land uses. It is also anticipated that the area exposed to aircraft noise of DNL 75 and higher from operations on the runway would be entirely on Airport property.

The air quality effects of the far parallel runway would need to be assessed, primarily to identify effects associated with the taxiing distances between the runway and the terminal area. Under current regulations, an air quality conformity analysis would be required, similar to that for Runway 11R-29L described above. In addition, removal of land from the 100-year floodplain associated with Airport Wash would be required along significant portions of the runway. No channelization has occurred in this area. Development of the runway would require a review under the Clean Water Act (including Section 404 of the Act) to identify, and provide mitigation for, the effects of the modification of the floodplain.

It is also anticipated that construction of future roadways and parking areas to accommodate demand will require air quality conformity determinations prior to approval for such construction. The conformity analysis would focus on changes in vehicular emissions associated with operations on the new roadways and parking facilities. In the event that certain specified increases in emissions would be exceeded, measures to reduce emissions in other areas would be required so that the net increase in emissions would be lower than the allowable increases.

A review of the known areas on Airport property where contamination of soil or groundwater exists was completed. Table 6-1 provides a summary of the review.

Because of the significant contamination within the west ramp area, the Authority is working with the Environmental Protection Agency (EPA) to identify remedies, which may require demolition of certain facilities. Demolition of facilities in the west ramp area would clear the extended runway protection zone for recommended Runway 11R-29L between the northwest end of the runway and Tucson-Nogales Highway. Most of the west ramp area would remain undeveloped and designated for airfield use. However, as depicted on Exhibit 6-1, a small area in the southern

Table 6-1
CONTAMINATION SITES
Tucson International Airport

Site	Contaminants	Screening criteria			No further action
		Soil gas >SGLs	Soil >HBGL	Soil >PRG	
South ramp and drains	VOCs	•			
Historic fire drill area west of Building C-294 (a)	VOCs	•			
Historic burn pit east of Building C-294 (a)	VOCs	•			
Authority landfill	VOCs	•			
	SVOCs, metals				•
Buildings D67-14, D68-15 (a)	SVOCs	•			
	VOCs				•
Buildings D69-16, D70-17 (a)	SVOCs, PCBs, metals, CN				•
	VOCs	•			
Building D71-18 (a)	VOCs	•			
	SVOCs, metals, CN				•
Structures 21 and 30	PCBs		•	•	
Building D-157 and adjacent soils to the north	VOCs, PCBs	•	•		
Former Building 32	VOCs	•			
Soils beneath west lease USTs	VOCs	•			
Sludges in canale system	VOCs, SVOCs, PCBs, metals				
Soil adjacent to canale	VOCs, SVOCs, metals, CN				•
	PCBs		•	•	
Drainages and ponding areas	SVOCs, PCBs		•	•	
	metals, VOCs				•
North and east sides of Hangar 1 (Building D-1-1) (a)	VOCs	•			

Table 6-1 (page 2 of 2)
CONTAMINATION SITES
 Tucson International Airport

Site	Contaminants	Screening criteria			No further action
		Soil gas >SGSLs	Soil >HBGL	Soil >PRG	
Hangar 1 (Building D-1-1) (a)	VOCs, PCBs	•			
Southern part of Hangar 2 (Building D-2-2) (a)	VOCs	•			
West end of Runway 3	VOCs	•			
Zone E shallow water-bearing zone	VOCs, metals, NO ₃				
	SVOCs, CN				•
East side of Hamilton Buildings D-252, D-267, D-275(a)	VOCs	•			
North end of Samsonite Building D-167 (a)	VOCs	•			
West side drainage	VOCs, SVOCs, metals				•
	PCBs		•	•	

CN = Cyanide

HBGLs = Arizona health-based guidance levels

NO₃ = Nitrate

PCBs = Polychlorinated biphenyls

PRG = Environmental Protection Agency Region IX preliminary remediation goal

SGSLs = Soil gas screen levels

SVOCs = Semivolatile organic compounds

UST = Underground storage tank

VOCs = Volatile organic compounds

(a) Refer to Table 2-1 and Exhibit 2-1 for locations of buildings.

Source: Tucson Airport Authority.

portion of the west ramp does not lie within the extended runway protection zone and could be developed in general aviation, air cargo, or other Airport-related uses. Redevelopment within these other west ramp areas, as well as several other Airport areas, would require a feasibility study consistent with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The study would consist of the following:

- Identification of the intended land use
- Assessment of the risk associated with development of that land use
- Determination of the remedy required to reduce the risk to acceptable levels
- Determination of the feasibility (financial and otherwise) of implementing remedial actions
- Decision regarding whether to proceed

The EPA is then responsible for issuing a Record of Decision that would or would not allow redevelopment to proceed.

A determination of the effects of future airfield facilities in terms of the Authority's National Pollutant Discharge Elimination System (NPDES) plans* for the Airport would be required and the appropriate measures included in the design of the facilities so that they would be in compliance with the plan. The additional paved areas would increase water runoff and could affect the overall quality of runoff water from the airfield.

SURFACE TRANSPORTATION

The Intermodal Surface Transportation Efficiency Act of 1991 provides federal funding for projects that enhance the efficiency of ground transportation and reduce emissions. Projects that qualify for these funds typically discourage the use of private automobiles—especially with only single-person occupancy—and encourage the use of mass transit or high-occupancy vehicles (e.g., light rail, buses, people movers). The projects at the Airport for which these funds may be available would be the ground access projects that would include such provisions for mass transit. These provisions would primarily be associated with the development of the proposed terminal building southeast of the existing terminal and the new ground access facilities required for that building.

*This plan is being prepared by the Authority.

PHASING PLAN

Table 6-2 presents the implementation phasing plan for the development program recommended in the Master Plan Update. The phasing plan is presented by planning activity level, as discussed in Chapter 5. The need for and timing of specific projects will depend on the achievement of levels of activity, also as discussed in Chapter 5.

The implementation phasing plan includes those projects recommended as part of this Master Plan Update as well as certain other projects considered critical for implementation by the Tucson Airport Authority. The list of projects in Table 6-2 is not intended to be a comprehensive list of all projects anticipated to occur at the Airport over the 20-year planning period. Other projects planned by the Authority and included in the Capital Improvement Plan (CIP) are discussed below.

FINANCIAL PLAN

A preliminary financial plan for the development program recommended in the Master Plan Update is provided in this section, along with other key projects in the Authority's CIP for the Airport.

Because of the uncertainties involved in projecting financial data, the financial analysis presented in this section covers only the major capital improvements expected to be required in the first 7 years (through 2003), which corresponds with PAL 2 under the baseline forecasts. It was assumed in the analysis that (1) future traffic levels will be achieved in accordance with the baseline forecasts, (2) the Authority will receive future Airport Improvement Program (AIP) grants-in-aid and State of Arizona grants-in-aid in support of certain eligible projects, and (3) the Authority will impose a passenger facility charge (PFC) in the amount of \$3 per eligible enplaned passenger. If the assumed traffic levels are not achieved or the assumed funds are not available, certain projects would be deferred.

The Authority owns and operates Ryan Airfield, a general aviation reliever airport to Tucson International Airport. These two airports (and any other airport that might be constructed or acquired by the Authority in the future) constitute the Airport System operated by the Authority (as referred to later in this chapter). No improvements at Ryan Airfield are included in the financial analysis.

The financial projections were prepared on the basis of available information and various assumptions. It is believed that such information and assumptions provide a reasonable basis for the projections to the level of detail appropriate for an airport master plan. However, some of the assumptions used to develop the projections will not be realized and unanticipated events and circumstances may occur. Therefore, the actual results will vary from those projected, and such variations could be material.

Table 6-2
IMPLEMENTATION PHASING PLAN
Tucson International Airport

Project description	Approximate project cost
PAL 1	
Land acquisition	
Acquire approximately 200 acres of land occupied by Hughes Missile Systems to accommodate the construction of Runway 11R-29L	\$ 2,400,000
Acquire approximately 960 acres of land owned by the State of Arizona to accommodate the relocation of Hughes Missile Systems facilities	6,150,000
Acquire approximately 1,440 additional acres of land to achieve land use compatibility with aircraft noise exposure	3,550,000
Airfield	
Construct new exit from Runway 11L-29R to Taxiway A, 2,000 feet from the Runway 11 arrival threshold	83,000
Construct new exit from Runway 3-21 to Taxiway D, 2,200 feet from the Runway 3 arrival threshold	79,000
Passenger terminal	
Install visual paging/monitoring system in the Main Passenger Terminal Building	300,000
Expand and remodel baggage claim area in the Main Passenger Terminal Building	10,000,000
Install shade canopies in the taxi parking area	388,000
Roadways and parking	
Construct 24-foot-wide roadway from terminal employee parking lot to the new air freight terminal	340,000
Support buildings	
Relocate the maintenance facility southeast of the passenger terminal complex near the aircraft rescue and fire fighting facility	2,000,000
Environmental	
Construct stormwater drainage facility structural improvements	2,000,000
PAL 1 to PAL 2	
Land acquisition	
Acquire approximately 410 acres of land to accommodate future far parallel runway	3,355,000
Planning	
Prepare an environmental assessment to determine the effects of constructing and operating recommended close parallel Runway 11R-29L	200,000
Airfield	
Demolish structures in the west ramp area to accommodate the extended runway protection zone of recommended close parallel Runway 11R-29L; restore area to cleared state	3,000,000

Table 6-2 (page 2 of 2)
IMPLEMENTATION PHASING PLAN
 Tucson International Airport

Project description	Approximate project cost
PAL 1 to PAL 2 (continued)	
Passenger terminal	
Extend and widen the east and west concourses to provide six to eight additional gates, construct Federal Inspection Services facilities in the lower level of the east concourse, expand the main terminal area for additional baggage claim	14,300,000
Construct aircraft parking apron for expanded east concourse	1,800,000
Construct aircraft fuel distribution system and hydrants for expanded concourses	625,000
Roadways and parking	
Construct parking garage for existing passenger terminal	10,500,000
PAL 2 to PAL 3	
Land acquisition	
Relocate Hughes Missile Systems facilities to accommodate planned close parallel Runway 11R-29L	-- (a)
Airfield	
Construct new Runway 11R-29L and redesignate existing Runway 11R-29L as a taxiway (includes high-speed taxiway exits and environmental mitigation)	26,116,000
Relocate Taxiway C to provide centerline-to-centerline spacing from new Runway 11R-29L of 450 feet	5,760,000
Passenger terminal	
Construct the first phase of a new passenger terminal building southeast of the existing terminal building	46,000,000
Roadways and parking	
Construct roadway access loop and parking to serve new terminal building	6,700,000
PAL 3 to PAL 4	
Passenger terminal	
Construct second phase of the new passenger terminal building	28,000,000

(a) The estimated cost for relocating the Hughes Missile Systems facilities is about \$25.0 million. The total amount that will be paid by the Tucson Airport Authority is not known at this time.

Sources: Tucson Airport Authority and Urban Engineering, Inc.

The financial plan is preliminary in nature and is not intended to be used to support the sale of bonds or to obtain other forms of financing. More detailed cost estimates and financial analysis would be required at such time the sale of bonds or other forms of financing is pursued.

Capital Improvement Program

Table 6-3 documents the capital improvements planned through 2003 and associated cost estimates by year.

The escalated costs associated with all projects through 2003 are estimated to total approximately \$89.5 million (\$65.1 million net after projected funding from federal and State grants-in-aid). Base year (1996) cost estimates were provided by the Authority or prepared by Urban Engineering. All cost estimates include allowances for engineering, design and program management fees, and contingencies. The cost estimates were escalated from 1996 to the estimated midpoint of construction at an assumed inflation rate of 3% per year (except for land acquisition).

Sources of Funding

The Authority's principal sources of funding for the development program are expected to be as follows:

- Proceeds from the sale of bonds to be paid from Airport-generated revenues
- Authority Capital Improvement Fund
- Federal grants-in-aid under the AIP
- State of Arizona grants-in-aid
- PFC revenues

The amount of funding available from each of these sources will depend on future levels of aviation activity at the Airport.

Financial Structure of the Authority

Two major documents govern and regulate the financial operations of the Authority: (1) the Bond Resolution and (2) the Use Agreements.

The Bond Resolution. The Authority has issued several series of Airport revenue bonds under the Bond Resolution. As of September 1996, \$73.3 million of such bonds were outstanding.

Table 6-3

CAPITAL IMPROVEMENT PROGRAM
Tucson Airport Authority
For Fiscal Years Ending September 30

Project Description	Project number	Estimated Project costs (1996 dollars)	Planning activity level	Project costs (escalated dollars) (a)						Total project costs (escalated dollars)	Grants-in-aid		Net project costs to be paid from Authority funds	
				1997	1998	1999	2000	2001	2002		2003	Federal		State
PLANNING PROJECTS														
Land acquisition - expansion	PD88-002B	\$8,550,000	1,2	--	\$2,138,000	\$2,138,000	\$2,138,000	\$2,138,000	--	--	\$8,552,000	\$3,909,000	\$3,348,000	\$1,295,000
Land acquisition - expansion	PD88-002B	3,355,000	2	--	--	--	--	1,678,000	1,678,000	--	3,356,000	1,534,000	1,314,000	508,000
Land acquisition - noise	PD88-002C	3,550,000	1,2	--	710,000	710,000	710,000	710,000	710,000	--	3,550,000	1,623,000	1,390,000	537,000
Sound insulation program	PD91-085	10,500,000	1,2 (b)	--	1,000,000	1,500,000	2,000,000	2,000,000	2,000,000	2,000,000	10,500,000	9,555,000	160,000	785,000
Mobile home acquisition	PD91-086	1,376,000	2 (b)	--	--	--	--	532,000	548,000	564,000	1,644,000	--	--	1,644,000
Environmental assessment - Runway 11R-29L	PD92-127	200,000	1	--	--	--	--	232,000	--	--	232,000	--	--	232,000
		\$27,531,000		--	\$3,848,000	\$4,348,000	\$4,848,000	\$7,290,000	\$4,936,000	\$2,564,000	\$27,834,000	\$16,621,000	\$6,212,000	\$5,001,000
BUILDINGS														
Expansion of main terminal and international facilities	PD89-001	\$14,300,000	2	--	--	--	--	\$8,289,000	\$8,537,000	--	\$16,826,000	--	--	\$16,826,000
Emergency generator	PD92-128	63,000	1 (b)	--	--	69,000	--	--	--	--	69,000	--	--	69,000
Executive work stations	PD93-165	32,000	1 (b)	--	34,000	--	--	--	--	--	34,000	--	--	34,000
Expand/remodel baggage claim area	PD96-227	10,000,000	1	--	10,609,000	--	--	--	--	--	10,609,000	--	--	10,609,000
Canopies at taxi parking	PD97-283	388,000	1	--	412,000	--	--	--	--	--	412,000	--	--	412,000
Visual monitor/paging system	PD96-226	300,000	1	--	--	328,000	--	--	--	--	328,000	--	--	328,000
		\$25,083,000		--	\$11,055,000	\$397,000	--	\$8,289,000	\$8,537,000	--	\$28,278,000	--	--	\$28,278,000
PARKING STRUCTURE														
Parking garage	PD88-003	\$10,500,000	2	--	--	\$5,737,000	\$5,909,000	--	--	--	\$11,646,000	--	--	\$11,646,000
CCTV and alarm	PD88-028	105,000	1 (b)	--	--	--	\$118,000	--	--	--	118,000	--	--	118,000
Terminal parking admin building	PD96-220	150,000	1 (b)	--	--	--	169,000	--	--	--	169,000	--	--	169,000
		\$10,755,000		--	--	\$5,737,000	\$6,196,000	--	--	--	\$11,933,000	--	--	\$11,933,000
EXECUTIVE TERMINAL														
Executive terminal elevator	PD88-018	\$118,000	2 (b)	--	--	--	\$133,000	--	--	--	\$133,000	--	--	\$133,000
New pilot lounge	PD91-091	61,000	2 (b)	--	--	--	69,000	--	--	--	69,000	--	--	69,000
Observation deck	PD92-130	99,000	1,2 (b)	--	--	108,000	--	--	--	--	108,000	--	--	108,000
		\$278,000		--	--	\$108,000	\$202,000	--	--	--	\$310,000	--	--	\$310,000
INDUSTRIAL - HANGARS - CARGO														
Demolition - restoration of west ramp area (c)	PD94-171	\$3,000,000	2	--	--	--	--	--	--	\$3,690,000	3,690,000	--	--	\$3,690,000
Demolition of Mobat Building	PD97-282	162,000	1 (b)	--	--	177,000	--	--	--	--	177,000	--	--	177,000
		\$3,162,000		--	--	\$177,000	--	--	--	\$3,690,000	\$3,867,000	--	--	\$3,867,000
SUPPORT BUILDINGS														
Shade structure	PD90-066	\$35,000	1 (b)	--	\$37,000	--	--	--	--	--	\$37,000	--	--	\$37,000
Building maintenance warehouse	PD93-163	143,000	1 (b)	--	152,000	--	--	--	--	--	152,000	--	--	152,000
Fuel truck covered parking	PD96-216	185,000	1 (b)	--	--	--	208,000	--	--	--	208,000	--	--	208,000
Expand existing warehouse	PD96-217	264,000	1 (b)	--	280,000	--	--	--	--	--	280,000	--	--	280,000
Relocate maintenance facility	PD97-281	2,000,000	1	--	--	2,185,000	--	--	--	--	2,185,000	--	--	2,185,000
		\$2,627,000		--	\$469,000	\$2,185,000	\$208,000	--	--	--	\$2,862,000	--	--	\$2,862,000

Table 6-3 (page 2 of 2)
CAPITAL IMPROVEMENT PROGRAM
Tucson Airport Authority
For Fiscal Years Ending September 30

Project Description	Project number	Estimated Project costs (1996 dollars)	Planning activity level	Project costs (escalated dollars) (a)						Total project costs (escalated dollars)	Grants-in-aid		Net project costs to be paid from Authority funds	
				1997	1998	1999	2000	2001	2002		2003	Federal		State
RUNWAYS - TAXIWAYS - APRONS														
Expand terminal apron	PD89-035	\$1,800,000	2	--	--	\$983,000	\$1,013,000	--	--	--	\$1,996,000	--	--	\$1,996,000
Overlay Taxiway D	PD90-064	1,787,000	1 (b)	1,841,000	--	--	--	--	--	--	1,841,000	842,000	721,000	278,000
Light removal and relocation - G.A. tiedown	PD92-135	204,000	1 (b)	--	216,000	--	--	--	--	--	216,000	--	--	216,000
G.A. apron reconstruction	PD92-148	9,000	1 (b)	--	--	10,000	--	--	--	--	10,000	--	--	10,000
Overlay Runway 11R-29L	PD93-169	2,413,000	1 (b)	--	--	--	2,716,000	--	--	--	2,716,000	--	--	2,716,000
Taxiway - Customs clearance area	PD95-196	85,000	1.2 (b)	--	--	93,000	--	--	--	--	93,000	--	--	93,000
Taxiway exit from Runway 11L		83,000	1	--	88,000	--	--	--	--	--	88,000	--	--	88,000
Taxiway exit from Runway 3		79,000	1	--	84,000	--	--	--	--	--	84,000	--	--	84,000
		\$6,460,000		\$1,841,000	\$388,000	\$1,086,000	\$3,729,000	--	--	--	\$7,044,000	\$842,000	\$721,000	\$5,481,000
UTILITIES - FUELING SYSTEMS														
Aircraft fuel distribution and hydrants	PD89-037	\$625,000	2	--	--	\$341,000	\$352,000	--	--	--	\$693,000	--	--	\$693,000
Hydrant feederline to air freight apron	PD90-058	1,236,000	2 (b)	--	--	--	--	716,000	738,000	--	1,454,000	--	--	1,454,000
Main terminal generators	PD92-136	93,000	1 (b)	96,000	--	--	--	--	--	--	96,000	--	--	96,000
Firehouse generator	PD92-139	36,000	1 (b)	--	38,000	--	--	--	--	--	38,000	--	--	38,000
Fuel farm A/B improvements	PD94-176	258,000	1 (b)	--	274,000	--	--	--	--	--	274,000	--	--	274,000
Fuel farm C improvements	PD94-177	39,000	1 (b)	--	41,000	--	--	--	--	--	41,000	--	--	41,000
Fuel farm D - construct roadway	PD94-178	22,000	2 (b)	--	--	--	25,000	--	--	--	25,000	--	--	25,000
Automotive fuel facility - tank farm D	PD95-198	86,000	2 (b)	--	--	--	97,000	--	--	--	97,000	--	--	97,000
Tank farm A/B dual electrical feeder	PD95-199	53,000	1 (b)	--	56,000	--	--	--	--	--	56,000	--	--	56,000
Upgrade tank farm A/B	PD97-264	104,000	1 (b)	107,000	--	--	--	--	--	--	107,000	--	--	107,000
Upgrade vehicle fueling facility	PD97-265	87,000	1 (b)	90,000	--	--	--	--	--	--	90,000	--	--	90,000
		\$2,639,000		\$293,000	\$409,000	\$341,000	\$474,000	\$716,000	\$738,000	--	\$2,971,000	--	--	\$2,971,000
PARKING - ROADWAYS														
Commercial roadway observation equipment	PD92-142	\$25,000	1.2 (b)	--	--	\$27,000	--	--	--	--	\$27,000	--	--	\$27,000
Airport drive	PD94-180	340,000	1	--	361,000	--	--	--	--	--	361,000	--	--	361,000
Lighting for east Park -N- Save overflow lot	PD96-218A	30,000	1 (b)	--	32,000	--	--	--	--	--	32,000	--	--	32,000
Development of west Park -N- Save overflow lot	PD96-218B	130,000	1 (b)	--	138,000	--	--	--	--	--	138,000	--	--	138,000
Development of east Park -N- Save lot	PD96-218C	40,000	1 (b)	41,000	--	--	--	--	--	--	41,000	--	--	41,000
Upgrade terminal entrance roadway	PD97-251	45,000	1 (b)	--	48,000	--	--	--	--	--	48,000	--	--	48,000
		\$610,000		\$41,000	\$579,000	\$27,000	--	--	--	--	\$647,000	--	--	\$647,000
SECURITY														
ARFF vehicle	PD88-031	\$325,000	1 (b)	--	\$345,000	--	--	--	--	--	\$345,000	--	--	\$345,000
CCTV upgrades	PD89-018	545,000	1 (b)	--	--	596,000	--	--	--	--	596,000	--	--	596,000
		\$870,000		--	\$345,000	\$596,000	--	--	--	--	\$941,000	--	--	\$941,000
ENVIRONMENTAL														
Storm water structural improvements	PD96-229	\$2,000,000	1	--	\$1,061,000	\$1,093,000	--	--	--	--	\$2,154,000.00	--	--	\$2,154,000
Hazardous material storage buildings	PD97-255	14,000	1 (b)	14,000	--	--	--	--	--	--	14,000	--	--	14,000
Fuel farm storm water detention structure	PD97-257	66,000	1 (b)	--	70,000	--	--	--	--	--	70,000	--	--	70,000
		\$2,080,000		\$14,000	\$1,131,000	\$1,093,000	--	--	--	--	\$2,238,000	--	--	\$2,238,000
Total		\$82,095,000		\$2,189,000	\$18,224,000	\$16,095,000	\$15,657,000	\$16,295,000	\$14,211,000	\$6,254,000	\$88,925,000	\$17,463,000	\$6,933,000	\$64,529,000

a. Projects costs except land are escalated at 3% per year.

b. Projects not included in the Master Plan Update are described in the Capital Improvement Program for Tucson International Airport.

c. Cost estimate includes demolition of three hangars.

Sources for cost estimates: Tucson Airport Authority and Urban Engineering.

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AIP grants can be used for land acquisition, noise mitigation, airfield improvements, roadways, public areas of terminal buildings, and safety and security systems. In allocating its discretionary funds, the FAA gives priority to projects that enhance airport capacity. Requests for grants to construct new and extend existing runways have the highest priority for AIP discretionary funds.

Airports where a PFC is imposed have their AIP entitlement grants reduced by 50%. As shown in Table 6-3, AIP grants-in-aid are projected to total \$17.5 million in 1997 through 2003 (on the assumption that the Authority will impose a PFC). In addition, the Authority estimates it will receive \$6.9 million in State of Arizona grants.

Passenger Facility Charges

Passenger facility charges of up to \$3 per eligible enplaned passenger are authorized under the Aviation Safety and Capacity Act of 1990 and can only be imposed following the approval of the FAA Administrator. Once a PFC is imposed, it is included as part of the ticket price paid by passengers, collected by the airlines, and remitted to the airport operator.

PFCs can be used to fund airport projects that (a) preserve or enhance the capacity, safety, or security of the air transportation system, (b) reduce noise or mitigate noise effects, or (c) furnish opportunities for enhanced competition between or among air carriers. PFCs cannot be used for commercial facilities at airports, such as restaurants and other concession space, rental car facilities, or public parking facilities, or for the construction of exclusively leased space or facilities.

For purposes of this preliminary financial plan, it was assumed that the Authority will receive authorization to impose a \$3 per passenger PFC effective at the beginning of calendar year 1998 and that all PFC revenue will be used to pay project costs. It is projected that up to \$6.5 million in PFC revenues will be received annually through FY 2003. The Authority could elect to use PFC revenue to secure revenue bond debt, in which case the required airline payments during the forecast period would be lower than those shown.

Preliminary Financial Plan

Table 6-4 presents the preliminary financial plan, showing proposed sources and uses of funds. Consistent with past Authority practice, it is assumed that project costs that cannot be funded with other sources (such as federal and State grants-in-aid, PFC revenues, and other Authority funds) will be financed with the proceeds of

Table 6-4

PRELIMINARY FINANCIAL PLAN
Tucson Airport Authority
For Fiscal Years Ending September 30

Sources of funds	Fiscal Year 1997	1998	1999	2000	2001	2002	2003	Total
Balance from previous year	--	--	\$11,408,000	\$5,279,000	--	\$329,000	(\$3,468,000)	\$13,548,000
Sale of Airport Revenue Bonds (a)	--	28,818,000	--	--	6,913,000	--	--	35,731,000
Interest earnings during construction period (b)								
Construction Fund	--	\$795,000	\$418,000	\$133,000	\$143,000	(\$76,000)	(\$82,000)	\$1,331,000
Bond Reserve Fund	--	--	--	--	--	--	--	--
Capitalized interest	--	234,000	141,000	47,000	34,000	11,000	--	467,000
Other sources								
PFC revenues	--	\$1,029,000	\$559,000	\$180,000	\$177,000	(\$65,000)	(\$82,000)	\$1,798,000
Federal (AIP) entitlement grants	685,000	\$3,957,000	\$5,554,000	\$5,837,000	\$6,050,000	\$6,281,000	\$6,506,000	\$34,185,000
Federal (AIP) discretionary grants	--	910,000	1,365,000	1,820,000	1,820,000	1,820,000	1,820,000	9,555,000
State grants (c)	721,000	1,130,000	1,138,000	1,145,000	1,802,000	965,000	30,000	6,931,000
Authority capital funds	783,000	332,000	349,000	366,000	384,000	404,000	424,000	3,042,000
Other funds	--	--	--	--	--	--	--	--
Total sources of funds	\$2,189,000	\$38,120,000	\$21,374,000	\$15,657,000	\$18,203,000	\$10,819,000	\$6,336,000	\$112,698,000
<hr/>								
Uses of funds								
Total project costs	\$2,189,000	\$18,224,000	\$16,095,000	\$15,657,000	\$16,295,000	\$14,211,000	\$6,254,000	\$88,925,000
Capitalized Interest (d)	--	5,620,000	--	--	899,000	--	--	6,519,000
Interim financing costs (e)	--	--	--	--	--	76,000	82,000	158,000
Bond Reserve Fund	--	2,292,000	--	--	542,000	--	--	2,834,000
Underwriter's discount and issuance expenses	--	576,000	--	--	138,000	--	--	714,000
	\$2,189,000	\$26,712,000	\$16,095,000	\$15,657,000	\$17,874,000	\$14,287,000	\$6,336,000	\$99,150,000
Balance to carry forward (e)	--	\$11,408,000	\$5,279,000	--	\$329,000	(\$3,468,000)	--	\$13,548,000
Total uses of funds	\$2,189,000	\$38,120,000	\$21,374,000	\$15,657,000	\$18,203,000	\$10,819,000	\$6,336,000	\$112,698,000

- a. Assuming 6.5% interest and 30 year amortization period on Bonds issued at beginning of 1998 and 2001.
b. Assuming an interest rate of 5% for the Construction Fund and capitalized interest account.
c. Source (1998-2002): Arizona Department of Transportation, Tentative Five-Year Plan, March 1996.
d. Assuming 3 years of capitalized interest on 1998 bonds and 2 years of capitalized interest on 2001 bonds.
e. Negative balances to be interim-financed.

additional bonds. It is assumed that two series of bonds will be issued: \$29.6 million in 1998 for PAL 1 projects and \$6.9 million in 2001 for PAL 2* projects.

Under the Use Agreements, the debt service requirements of such bonds (plus coverage at 25%) would be included in the annual calculation of airline landing fees, provided that majority-in-interest airline approval is obtained.

Required Airline Revenue

Table 6-5 presents the calculation of the airline revenue requirement (to be paid as airline landing fees) for each year through FY 2004. Also shown is the total of all airline payments (space rentals, landing fees, and other charges) expressed per enplaned passenger.

Debt service requirements (including coverage) increase from \$8.2 million in FY 1996 to \$11.1 million in FY 2001 and then to \$11.8 million in FY 2004.

Operating and maintenance expenses were projected on the assumption that the unit costs of wages, salaries, employee benefits, services, supplies, and other expenses will increase approximately 3% per year. Taking into account the increase in activity at the Airport and the addition of terminal and other facilities, operating and maintenance expenses are projected to increase an average of 5.5% per year, to \$26.8 million in FY 2004.

Fund replenishments include amounts deposited to the Operation and Maintenance Reserve Account and the Capital Improvement Fund. Other requirements include payments to the Special Reserve Fund of 52% of the net income from the Airport's industrial areas and interest income on the Special Reserve Fund.

The major sources of revenue, other than airline space rentals and landing fees, are space rentals from nonairline tenants; public parking, rental car, and other concession fees; fuel sales and aircraft parking fees; other building and ground rentals; and interest income on invested balances in the funds and accounts of the Authority. Such revenues are projected to increase 5.0% per year.

Under the Use Agreements, debt service coverage not required for other purposes is deposited into the Airline Reserve Fund, to be used at the discretion of the airlines. It was assumed in this analysis that, in each year, all amounts in the Airline Reserve Fund will be applied to reduce the airline revenue requirement in the following year.

Conclusion

The net airline revenue requirement, as shown in Table 6-5, is projected to increase from \$2.4 million in FY 1996 to \$3.0 million in FY 2004. Total airline payments from

*Timing for PAL 1 and PAL 2 projects is according to the baseline forecasts.

Table 6-5

AIRLINE REVENUE REQUIREMENT
Tucson Airport Authority
For Fiscal Years Ending September 30

The projections presented in this table were prepared using information from the sources indicated and the assumptions provided by, or reviewed with and agreed to by, Airport management, as described in the accompanying text. Inevitably, some assumptions used to develop the projections will not be realized and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the projected and actual results and those differences may be material.

	Budget (a)		Projected						
	1996	1997	1998	1999	2000	2001	2002	2003	2004
Debt service									
Airport Revenue Bonds									
1990 Airport Revenue Bonds	\$1,639,960	\$1,644,000	\$1,640,000	\$1,640,000	\$1,640,000	\$1,640,000	\$1,640,000	\$1,640,000	\$1,640,000
1993 Refunding Revenue Bonds	4,915,368	4,914,000	4,914,000	4,914,000	4,914,000	4,914,000	4,914,000	4,914,000	4,914,000
Proposed 1998 Revenue Bonds (b)	--	--	--	--	--	2,292,000	2,292,000	2,292,000	2,292,000
Proposed 2001 Revenue Bonds (c)	--	--	--	--	--	--	--	542,000	542,000
	<u>\$6,555,328</u>	<u>\$6,558,000</u>	<u>\$6,554,000</u>	<u>\$6,554,000</u>	<u>\$6,554,000</u>	<u>\$8,846,000</u>	<u>\$8,846,000</u>	<u>\$9,388,000</u>	<u>\$9,388,000</u>
Coverage on Bonds @ 25%	\$1,638,832	\$1,640,000	\$1,639,000	\$1,639,000	\$1,639,000	\$2,212,000	\$2,212,000	\$2,347,000	\$2,347,000
Total debt service requirement	<u>\$8,194,160</u>	<u>\$8,198,000</u>	<u>\$8,193,000</u>	<u>\$8,193,000</u>	<u>\$8,193,000</u>	<u>\$11,058,000</u>	<u>\$11,058,000</u>	<u>\$11,735,000</u>	<u>\$11,735,000</u>
Total Operation and Maintenance Expenses	\$18,717,535	\$18,581,000	\$19,510,000	\$20,486,000	\$21,510,000	\$22,586,000	\$23,715,000	\$25,496,000	\$26,771,000
Fund replenishments									
Operation and Maintenance Reserve Account	\$222,762	\$87,000	\$232,000	\$244,000	\$256,000	\$269,000	\$282,000	\$445,000	\$319,000
Bond Reserve Fund requirement (d)	--	--	--	--	--	--	--	--	--
Capital Improvement Fund	402,029	422,000	443,000	465,000	488,000	512,000	538,000	565,000	593,000
Special Reserve Fund	655,284	434,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000
Total fund replenishments	<u>\$1,280,075</u>	<u>\$943,000</u>	<u>\$1,375,000</u>	<u>\$1,409,000</u>	<u>\$1,444,000</u>	<u>\$1,481,000</u>	<u>\$1,520,000</u>	<u>\$1,710,000</u>	<u>\$1,612,000</u>
Adjustments									
52% of Industrial Area net income	\$610,017	\$653,000	\$680,000	\$699,000	\$720,000	\$742,000	\$763,000	\$785,000	\$808,000
Investment income from Special Reserve Fund	391,129	436,000	440,000	440,000	440,000	440,000	440,000	440,000	440,000
	<u>\$1,001,146</u>	<u>\$1,089,000</u>	<u>\$1,120,000</u>	<u>\$1,139,000</u>	<u>\$1,160,000</u>	<u>\$1,182,000</u>	<u>\$1,203,000</u>	<u>\$1,225,000</u>	<u>\$1,248,000</u>
Total expenses	<u>\$29,192,916</u>	<u>\$28,811,000</u>	<u>\$30,198,000</u>	<u>\$31,227,000</u>	<u>\$32,307,000</u>	<u>\$36,307,000</u>	<u>\$37,496,000</u>	<u>\$40,166,000</u>	<u>\$41,366,000</u>

Table 6-5 (page 2 of 2)
AIRLINE REVENUE REQUIREMENT
Tucson Airport Authority
For Fiscal Years Ending September 30

		Budget (a)		Projected						
		1996	1997	1998	1999	2000	2001	2002	2003	2004
Less: deductions										
Signatory Airline revenues (e)	[A]	\$7,147,800	\$7,366,000	\$7,442,000	\$7,830,000	\$7,911,000	\$8,324,000	\$8,412,000	\$10,384,000	\$10,478,000
Nonsignatory airline revenues	[B]	1,702,570	1,886,000	1,951,000	2,018,000	2,089,000	2,161,000	2,236,000	2,314,000	2,394,000
Concession revenues		8,063,900	8,846,000	9,608,000	10,474,000	11,445,000	12,612,000	13,622,000	14,688,000	15,833,000
Other operating revenues		6,299,151	6,688,000	6,849,000	7,017,000	7,189,000	7,368,000	7,552,000	7,745,000	7,943,000
Interest income		930,529	971,000	1,005,000	1,040,000	1,076,000	1,114,000	1,153,000	1,193,000	1,235,000
Cost of goods sold		(1,388,456)	(1,488,000)	(1,562,000)	(1,640,000)	(1,722,000)	(1,808,000)	(1,898,000)	(1,993,000)	(2,093,000)
Total operating income		\$22,755,494	\$24,269,000	\$25,293,000	\$26,739,000	\$27,988,000	\$29,771,000	\$31,077,000	\$34,331,000	\$35,790,000
Net expenses		\$6,437,422	\$4,542,000	\$4,905,000	\$4,488,000	\$4,319,000	\$6,536,000	\$6,419,000	\$5,835,000	\$5,576,000
Less:										
Short term proceeds		\$650,000	--	--	--	--	--	--	--	--
Airline Reserve Fund		1,639,096	1,639,000	1,640,000	1,639,000	1,639,000	1,639,000	2,212,000	2,212,000	2,347,000
Earned income in excess of budget estimate		1,121,639	(6,000)	--	--	--	--	--	--	--
		\$3,410,735	\$1,633,000	\$1,640,000	\$1,639,000	\$1,639,000	\$1,639,000	\$2,212,000	\$2,212,000	\$2,347,000
Airline revenue requirement (to be paid from Landing Fees)	[C]	\$3,026,687	\$2,909,000	\$3,265,000	\$2,849,000	\$2,680,000	\$4,897,000	\$4,207,000	\$3,623,000	\$3,229,000
Enplaned passengers	[D]	1,888,000	2,009,000	2,126,000	2,238,000	2,352,000	2,438,000	2,530,000	2,621,000	2,714,000
Total airline payments per enplaned passenger	[A+B+C]/[D]	\$6.29	\$6.05	\$5.95	\$5.67	\$5.39	\$6.31	\$5.87	\$6.23	\$5.93

- a. Source: Tucson Airport Authority.
b. Interest is capitalized through 2000.
c. Interest is capitalized through 2002.
d. Assumed to be fully funded from Bond proceeds.
e. Excludes Signatory Airline landing fees.

space rentals, landing fees, and other charges are projected to increase from \$11.2 million (\$5.94 per enplaned passenger) in FY 1996 to \$16.0 million (\$5.88 per enplaned passenger) in FY 2004.

The financial analysis shows that the implementation of the PAL 1 and PAL 2 master plan projects is financially feasible on the basis of the information and assumptions used, subject to approval by a majority-in-interest of the airlines. Such approval would permit the issuance of bonds under the provisions of the Bond Resolution and the Use Agreements, thereby providing the funds to support the financial requirements of the recommended projects.

Long-Term Funding

Beyond 2003, that development of the Airport will continue as required to meet the needs of increased demand levels consistent with future funding sources available to the Authority at the time of implementation. The financial feasibility of future projects will be determined by the provisions of the Bond Resolution and the Use Agreements (and any successor agreements), and by funding levels and participation rates of federal and State grants-in-aid programs.

SUMMARY OF PLANNING GUIDELINES

Table 6-6 provides a summary of the comparative criteria with respect to the recommended Master and Land Use Plan. Table 6-7 provides a summary of considerations regarding each of the planning guidelines as addressed in the recommended Master and Land Use Plan.

Table 6-6

SUMMARY OF COMPARATIVE CRITERIA FOR THE RECOMMENDED LAND USE PLAN
Tucson International Airport

Criterion	Recommended Plan
Ability to accommodate future demand for aircraft, passengers, and vehicles	<ul style="list-style-type: none"> • Meets criterion.
Project cost (a)	<ul style="list-style-type: none"> • Close parallel runway: \$38.0 million (b) • Far parallel runway: \$68.0 million - \$70.3 million • Passenger terminal improvements through PAL 4: \$95 million • New passenger terminal: \$170 million
Environmental effects	<ul style="list-style-type: none"> • No significant increases in noise levels anticipated over noise-sensitive land uses from close parallel runway. • Relocation of Hughes facilities and associated environmental cleanup required for close parallel runway. • Potential environmental remediation in area near existing AANG test pad. • Eventual construction within area traversed by Airport Wash southeast of existing cargo area. • Terminal and parking expansion would require air quality conformity determination. Eventual construction of new terminal to the southeast would require more significant air quality conformity review. • Primary environmental effects of close parallel runway identified in environmental assessment for land acquisition—an environmental assessment (and possibly an environmental impact statement) specifically addressing runway development would be required. A full environmental assessment (and possibly an environmental impact statement) would be required for eventual construction of far parallel runway—not anticipated within planning period.

Table 6-6 (page 2 of 2)
**SUMMARY OF COMPARATIVE CRITERIA FOR THE
 RECOMMENDED LAND USE PLAN**
 Tucson International Airport

Criterion	Recommended Plan
Ability to meet long-range goals	<ul style="list-style-type: none"> • Meets criterion.
Phasing considerations	<ul style="list-style-type: none"> • Allows incremental terminal expansion. • Temporary changes to ground access and parking may be necessary during construction of new terminal. • Preserves existing cargo facilities, with additional cargo expansion occurring on other Airport land. • Requires intermittent closure of temporary Runway 11R-29L during part, if not all, of the runway construction period.
Other considerations	<ul style="list-style-type: none"> • Maximizes efficiency of airfield/passenger terminal access and taxiing times in the short- and long-terms, assuming that third parallel runway would not be constructed until/unless terminal is relocated. • Maintains general aviation near Runway 3-21—short taxiing distance for crosswind runway use. • Cargo development to the southeast in area previously reserved for general aviation not needed prior to construction of far parallel runway. • General aviation runway to the southeast not needed. • Eventually, land occupied by existing terminal facility could be redeveloped for general aviation or air cargo as needed.

(a) All costs expressed in 1996 dollars.

(b) Does not include costs for relocation of Hughes Missile Systems facilities. See Table 5-1.

<p>Table 6-7</p> <p>CONSIDERATION OF PLANNING GUIDELINES— RECOMMENDED MASTER AND LAND USE PLAN</p> <p>Tucson International Airport</p>	
PLANNING GUIDELINE	COMMENTS
Airport Role	
1. Primary—air carrier, including air cargo	Met
2. Secondary—Arizona Air National Guard and general aviation	Met
Aviation Activity Forecasts	
3. Use planning activity levels	Used to establish requirements and phasing plan
4. Protect site for ultimate development	Met
5. Consider changes in airline service patterns and airfares	Considered in forecasts
6. Consider potential increase in passengers between Tucson and Mexico	Considered in forecasts
7. Consider potential increase in cargo and intermodal transportation associatedw with NAFTA	Considered in forecasts
Airfield Capacity/Development	
8. Reserve sites for up to three new parallel runways	Third new parallel runway to the southeast for general aviation not needed for recommended plan
9. Coordinate activities with Davis-Monthan AFB	Met
10. Sequence runway construction on the basis of defined criteria	Met
11. Consider ultimate length of Runway 11L-29R	Additional runway length determined not to be needed
12. Consider crosswind runway requirements	No additional crosswind runways required—improved runway exits and taxiway access addressed
13. Provide flexibility for technological advances/tower relocation	Met—tower relocation required regardless of recommended plan
Passenger Terminal Complex	
14. Provide for ultimate development at a midfield site	Met—land reserved for future terminal relocation
15. Consider changes in airline requirements	Terminal area requirements reflect changes in airline needs
16. Maintain flexibility to accommodate different aircraft types	Use of swing gates for international flights and use of jet parking positions for commuter aircraft—future terminal design would address specific requirements
Airport Access and Parking	
17. Maintain primary access via South Tucson Boulevard	Maintained throughout planning period
18. Provide for future transit facilities	Terminal concept would accommodate bus, rail, or other transit mode
19. Provide access to northeast area including multimodal facilities	Met
20. Provide intermodal facilities to maximize cargo potential from NAFTA	Met—appropriate land uses identified
21. Provide for a variety of automobile parking options	Met—short- and long-term parking accommodated on Airport property
Overall Land Use	
22. Place highest priority on land required for aviation needs	Met
23. Consider providing land for aviation compatible uses for remaining land	Met
Environmental Impacts	
24. Minimize adverse environmental impacts	Close parallel runway as initial runway minimizes environmental effects
Financial Resources	
25. Establish phasing consistent with need and financial capabilities	Met
26. Consider all potential sources of financing	Met—may change as part of planning for specific facilities